

Title: PROBES FOR CHONDROGENESIS

Inventors Name: Hering, et al.

Attorney Docket Number: 27708/03905

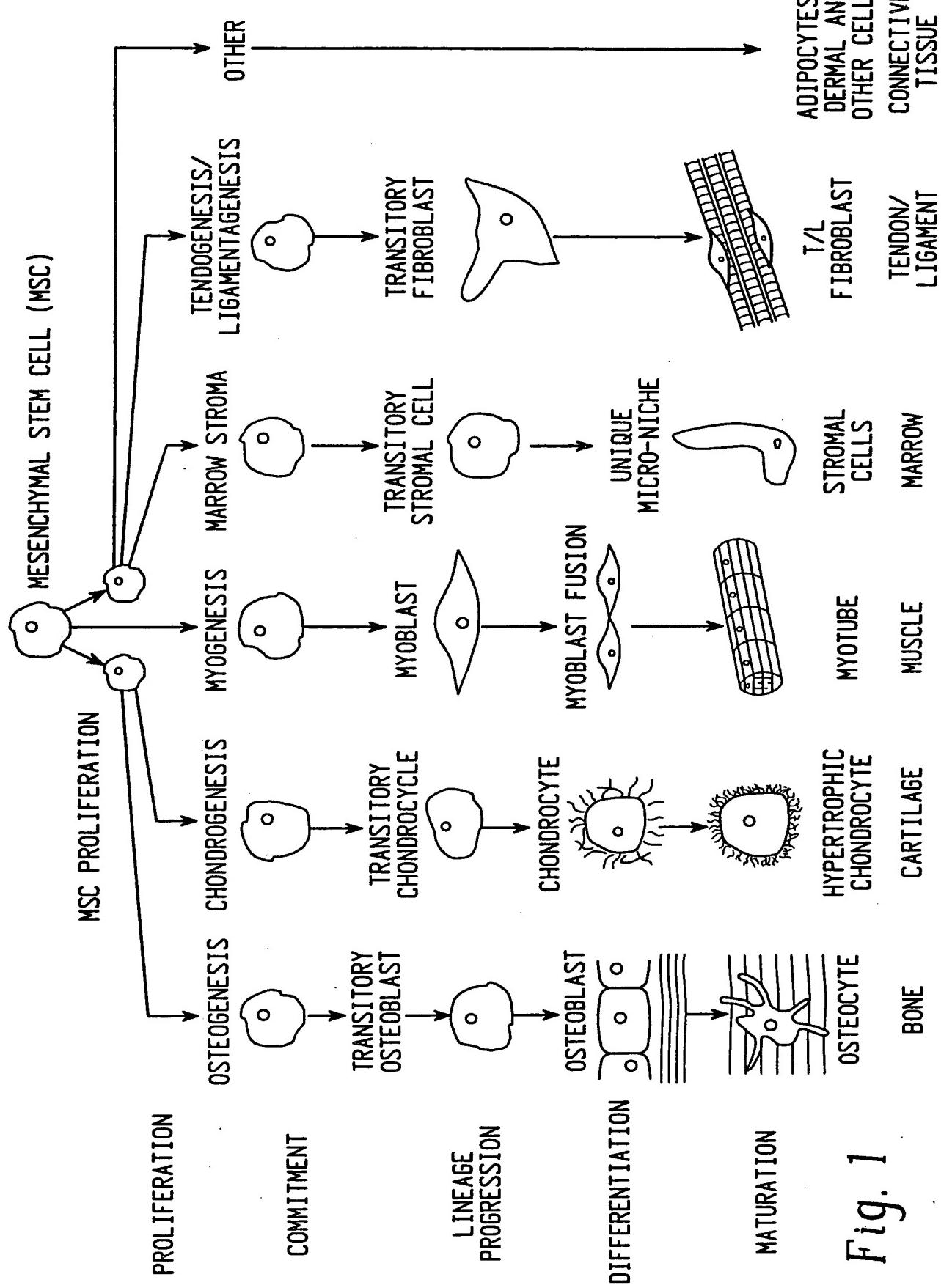
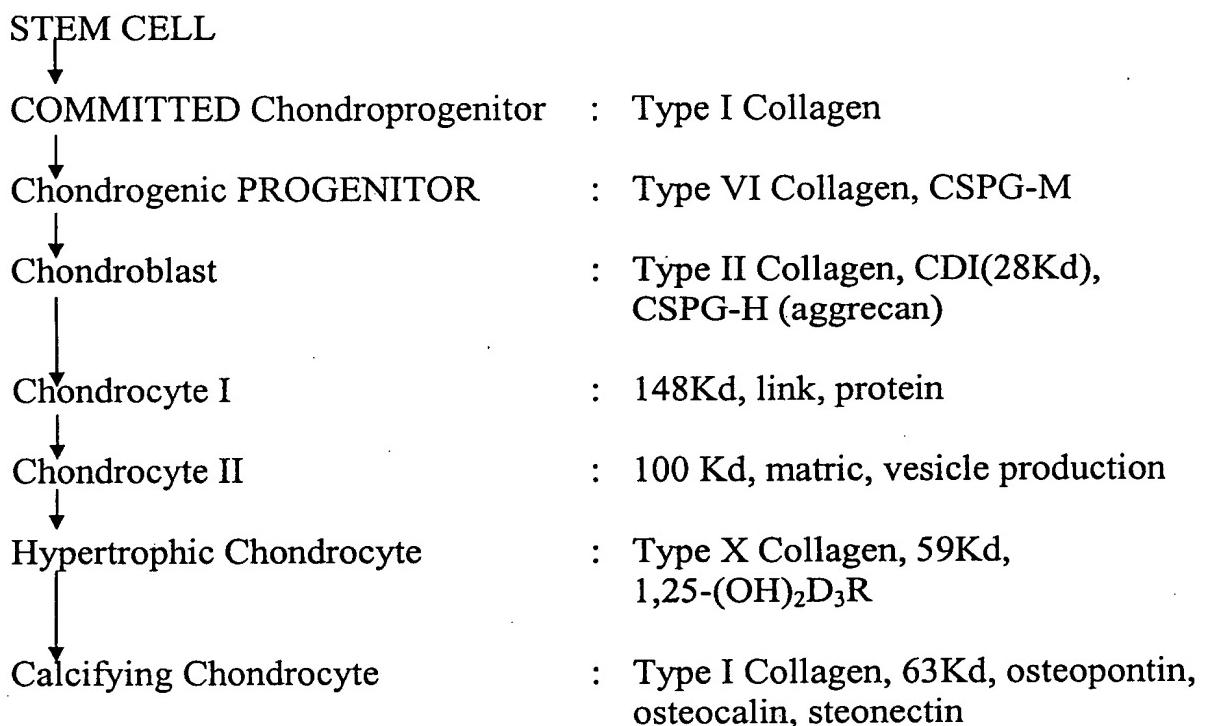


Fig. 1

Fig. 2

## CHONDROGENIC LINEAGE



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Fig. 3A

Sequence of CZF-1 (cDNA)

50  
AATGGAGCGAACGACCATGGGGACTGAGTACACAGATGAAGACACAGAACG  
  
100  
ATAGAGAGGATAAGTAATCACTAGCAAGTGGAAAGAACCGGGATTCA  
  
150  
CAGAACAGGCTGACTCCAGAGTCAGTGCTGTAGTTCTCAA  
  
200  
ACTGCCTCAGCTCTACAATCCCAGAGTAAAGCTCTCTCAA  
  
250  
CCAGGAAGAGGTAGAGGTGGCAGGAATTAAACTTGTAAAGCCATGT  
  
300  
TGGGTTCACTGACTTACAGATGTGCCATAGACTTTCCAAGATGAA  
  
350  
TGGGAGTGGCTGAATCTGCTCAGAGAAGTTGTACAAGAAGGTGATGTT  
  
400  
AGAAAACACAGAACCTAGTTCACTGGGTCTTGCATTCTAAACCAG  
  
450  
ATGTGATCTCCTTACTGGAGCAAGAGAAAGACCCTGGGTGATAAAAGGA  
  
500  
GGGATGAACAGAGGCCTGTGCCAGACTGGAGTGTGTGGGTGACCAA  
  
550  
ATCATTATCTTAAACCAGGATATTATGAAGAAAAATTACCCCCGGCAA  
  
600  
TCATAATGGAAAGACTTAAAGCTATGACCTTGAATGTTAACATTAGGG  
  
650  
AAAAACTGGAAATGTGAAGACTTGTGAGAGGGAGCTTGTAAACCAGAA  
  
700  
GACACATTTAGGCAAGAGACCATCACTCATATAGATACTCTTATTGAAA  
  
750  
AAAGAGATCACTCTAACAAATCTGGGACAGTTTCATCTGAATACATTA  
  
800  
TCTTATATAAACAGATTTCCATGGAAGAGAGAATTTAATTCA

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Fig. 3B

850  
TACAGATAAGAAAAGCTAAAAACACATTCAAGTTGTGAAAAAACACAAGC  
  
900  
AAGACCGTGGAGAAAAGAAACTTTAAAATGTAATGACTGTGAGAAAATA  
  
950  
TTCAGCAAAATCTCAACCCTTACTCTCACCAAAGAATTACAGGAGA  
  
1000  
GAAACCCTATGAATGTATTGAATGTGGAAAGGCCTTAGCCAGAGTGCC  
  
1050  
ACCTTGCTCAACATCAGAGAATACACACAGGAGAAAACCTTTGAATGT  
  
1100  
ACTGAATGTGGAAAGCCTTCAGCCAGAATGCTCATCTGTTCAACACCA  
  
1150  
GAGAGTTCATACTGGAGAGAAACCTTATCAGTGTAAAGCAGTGTAAATAAG  
  
1200  
CATTCAAGCCAGCTTGCACACCTTGCTCAACATCAGAGGGTCCACACTGGA  
  
1250  
GAGAAACCTATGAATGTATTGAATGTGGAAAGGCTTTAGTGTGATTGCTC  
  
1300  
ATCCCTAGCTCATCATCGAAGGATTCACACTGGAAAAGACCTTATGAAT  
  
1350  
GTATTGACTGTGGAAAGCTTCAGGCAGAATGCTCTCTTACGTCT  
  
1400  
CGGCGATATTATCATACTGGAGAGAAACCTTGACTGTATTGATTGTGG  
  
1450  
GAAGGCTTCACTGATCACATAGGACTTATTCAAGCATAAGAGAATTCTA  
  
1500  
CTGGAGAGAGACCTTACAAATGTAATGTGTGGAAAGGCTTTAGCCAT  
  
1550  
GGCTCATCTCTGACAGTACATCAGAGAATTCAACAGGAGAGAAACCTTA  
  
1600  
TGAATGCAATATCTGTGAGAAAGCCTTCAGCCATCGTGGGTCTCTACTC

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Fig. 3C

1650  
TTCATCAGAGAGTTCATACTGGAGAGAAACCCTATGAATGTAAAGAATGT  
  
1700  
GGGAAAGCTTCCGGCAGAGCACGCATCTGGCTCATCATCAGAGAATTCA  
  
1750  
TACTGGAGAGAAACCTTATGAATGTAAGGAATGCAGCAAAACCTTCAGCC  
  
1800  
AGAATGCACACCTCGCGCAGCAGCAGAAAATACACACTGGGGAGAACGC  
  
1850  
TATGAATGTAAGGAACGTGGTAAGGCCTTCAGTCAGATTGCACACCTTGT  
  
1900  
TCAGCACCAAGAGAGTTCATACTGGTGAGAAGCCTACGAATGTATTGAAT  
  
1950  
GTGGGAAGGCCTTAGTGATGGCTCATATCTTGTCAACATCCGAGACTC  
  
2000  
CACAGTGGCAAAAGACCGTATGAATGTCTGAATGTGGGAAGGCATTAG  
  
2050  
GCAGAGGGCATCCTGATTGTCATCAGAGATGTCATACTGGTGAGAAC  
  
2100  
CTTATGAATGTAATGTTGTGGAAAGCCTTAGGCCATCGTAAATCCCTT  
  
2150  
ACTCTGCATCAGAGAATTACATACAGGAGAGAAACCTTATGAGTGTAAAGGA  
  
2200  
ATGTAGCAAAGCCTTCAGCCAGGTTGCCATCTTACTCTACATAAGAGAA  
  
2250  
TTCATACTGGAGAAAGGCCATGAGTGTAAAGAATGTGGAAAAGCCTTC  
  
2300  
AGGCAGAGTGTACATCTGCTCATCAGCGAATTACACCGGAGAGTC  
  
2350  
ATCAGTTATTCTCCTCTGCCCTCCATACCACCAAGTCCTATAGATTG  
  
2400  
AATCTCGTAAATGCTTCTAGCATCCATCTGCTTTTCCAGCACATGTCC

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Fig. 3D

2450  
CATCATCATAGTCCAAGACGCAACCATCTCATCTGGATTCTGCAGTAGC  
  
2500  
ATAACTGTTGCCCTTTGCTTCTATCAACTACATGTTAACACTGTAGG  
  
2550  
CAGCCTAACCTTTAAAAATAAAACATAATTATGTTATTTCCCAT  
  
2600  
TTAAAAACACTTGATTTGAAAAATATATTAACTAATCCATTCAAGGATT  
  
2650  
AGCACACACTGGCATATAGTTATTGCTAAATAATGCTAGCCATTAAGGT  
  
2666  
AAAAAAAAAAAAAAA

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KRAB-A

KRAB-B

MKSQEEVEVAGIKLCKAMSLGSLTFDVAIDFSQDEWEWLNLAQRSLYKKVMLENYRNLVSVGLCISKPDVISLLEQ

EKDPWVIKGGMNRGLCPDLECWWTKSLSLNQDIYEEKLPPIIMERLKSYDLECSTLGKNWKCEDLFERELVNQKT

HFRQETITHIDTLIEKRDHSNKSGTVFHLNTLSYIKQIFPMEERIFNFHTDKKSLKTHSVVKHKQDRGEKKLLCN

ZF-1

ZF-2

ZF-3

DCEKIFSISTLT LHQRRIHTGEKPYECIECGKAFSQSAHLA QHORIHTGEKFECTECGKAFSQNAHL VQHQ RVHTG

ZF-4

ZF-5

ZF-6

EKPYQCKQCNKAFSQLAHLA QHQ RVHTGEKPYECIECGKAFSDCSSLAHHRRRIHTGKR PYECIDCGKA FRQN ASLIR

ZF-7

ZF-8

ZF-9

HRRYYHTGEKPFDCIDCGKAFTOHIGLIQHQ KRIHTGERPYKCNCVCGKAFSHGSSLTVHQ RIHTGEKPYEC NICEKAF

ZF-10

ZF-11

SHRGSLTLHQ RVHTGEKPYECIECGKAFFRQSTHLAHHQRRIHTGEKPYECIECGKAFSQNAHLA QHQ KIHTGEKPYEC

ZF-12

ZF-13

ZF-14

KERGKAFSQIAHLVQHQ RVHTGEKPYECIECGKAFSDGSYLVQHPRLHS GKR PYECIECGKAFRQRASLICHQRCHT

ZF-15

ZF-16

ZF-17

GEKPYECNCVCGKAFSHRKSLTLHQ RIHTGEKPYECIECGKAFSQVAH LTLHQ KRIHTGERPYECIECGKAFRQSVHLA

HHQRRIHTGESSVILSSALPYHQVL\*

Fig. 4

KRAB-A

MTOGLVTFRVAIDFSQEEWECLDPAQRDLYVOMLENYSNLVSLDLESKYETKKIFSSENDIFEINFSQWEMK

ZF-1

OKSKTLGLEASIFRNNWKCKSIFEGLK GHQE GYFSQMIISYEKIPSYRKS KSLTPHQ RIHNT EKSYVC KECGK

ZF-2

ZF-3

ACSHGSKLVQHERHTAEKHFECKE CGKN YLSAYQLNVHQ RFHTGEKPYECIECGKTF SWGSSLVKHERIHT

ZF-4

ZF-5

ZF-6

GEKPYECIECGKAFSRGYHLTQHQ KIHI GVKSYK CKECGK AFFWGSSLAKHEIIHTGEKPYK CKECGKAFSR

ZF-7

ZF-8

GYQLTQHQ KIHTGKKPYECICKICGKAFCWGYQLTRHQ IFHTGEKPYECIECGKAFNCGSSLIQHERIHTGEKP

ZF-9

ZF-10

ZF-11

YECKE CGKAFSRGYHLSQHQ KIHTGEKPFECIECGKAFSWGSSLVKHERVHTGEKSHECKE CGKTFCSGYQLT

ZF-12

RHQVFHTGEKPYECIECGKAFNCGSSLVQHERIHTGEKPYECIECGRLLVVAITLLNIRKFIPVRNLNSVRNV

GRPSVGVA \*

Fig. 6

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Fig. 5A

Sequence of CZF-2 (cDNA)

50 GGGAGTTCTTGCATTCCAGAACCATGACTGATGGGTTGGTGACATTGAG  
100 GGATGTGGCCATCGACTTCTCTCAGGAGGAGTGGGAATGCCTGGACCCTG  
150 CTCAGAGGGACTTGTACGTGGATGTAATGTTGGAGAACTATACTGAACTTG  
200 GTGTCACTGGATTGGAGTCAAAAACGTATGAGACCAAAAAATTTTC  
250 AGAAAATGATATTTTGAATAAATTTTCCCAGTGGAGATGAAGGACA  
300 AAAGTAAAACCCTTGGCCTTGAGGCATCCATCTCAGAAATAATTGGAAG  
350 TGCAAAAGCATATCGAGGGACTAAAGGACATCAAGAGGGACTTCAG  
400 TCAAATGATAATCAGCTATGAAAAAACCTTCTTACAGAAAAAGTAAAT  
450 CTCTTACTCCACATCAAAGAATTCTATAATACAGAGAAATCCTATGTTGT  
500 AAGGAATGTGGGAAGGCTTGCAGTCATGGCTCAAAACTTGTCAACATGA  
550 GAGAACTCATACAGCTGAAAAGCACTTGAATGTAAGAATGTGGGAAGA  
600 ATTATTTAAGTGCCTATCAACTCAATGTGCATCAGAGATTCTACTGGT  
650 GAGAAACCTATGAGTGTAAAGGAATGTGGGAAGACCTTAGCTGGGATC  
700 AAGCCTTGTAAACATGAGAGAAATTCACACTGGTGGAAACCTATGAAT  
750 GTAAAGAATGTGGGAAGGCCTTAGTCGTGGCTATCACCTTACCCAACAT  
800 CAGAAAATTCTATTGGTGTGAAATCTTATAATGTAAGGAATGTGGGA

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Fig. 5B

850  
GGCCTTTTGGGCTCAAGCCTGCTAAACATGAGATAATTACAG  
  
900  
GTGAGAACCTTATAAATGTAAAGAATGTGGGAAGGCCTCAGTCGTGGC  
  
950  
TATCAAACTTACTCAGCATCAGAAAATCCATACTGGTAAGAACCTTATGA  
  
1000  
ATGTAAAATATGTGGAAAGGCTTTGTTGGGCTATCAAACTTACTCGAC  
  
1050  
ATCAGATATTCATACTGGTGAGAAACCCTATGAATGCAAGGAATGTGGG  
  
1100  
AAGGCTTTAATTGCGGATCAAGTCTTATTCAACATGAAAGAACATTAC  
  
1150  
TGGTGAGAACCTTATGAATGTAAAGAATGTGGAAAGGCCTTAGTCGTG  
  
1200  
GCTATCACCTTCTCAACATCAGAAAATCCATACTGGTGAGAACCTTT  
  
1250  
GAATGTAAGGAATGTGGGAAGGCCTTAGTTGGGTTCAAGCCTGTTAA  
  
1300  
ACATGAGAGAGTCATACTGGTGAGAAATCCCATGAATGTAAAGAACGCG  
  
1350  
GAAAGACCTTTGTAGTGGGTATCAAACTTACTCGACATCAGGTATTCAC  
  
1400  
ACTGGTGAGAACCCATGAATGTAAAGGAATGTGGGAAGGCTTTAATTG  
  
1450  
TGGATCAAGCCTGTTCAACATGAAAGAACCCATACAGGGGAGAACCCCT  
  
1500  
ATGAATGTAAGAACATGTGGAAAGGCTTTAGTCGTGGCTATCACCTTACTC  
  
1550  
AACATCAGAAAATTACCGGTGAGAACCTTCAAATGTAAAGGAATGT  
  
1600  
GGGAAGGCCTTCAGTTGGGTTCAAGCCTAGTTAACCATGAGAGAGTCCA

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Fig. 5C

1650  
TACTAATGAGAAGTCTTATGAATGTAAAGACTGTGGAAAGGCCTTGGTA  
  
1700  
GTGGCTATCAACTTAGTGTTCATCAGAGATTCATACTGGTGAGAAGCTT  
  
1750  
TATCAACATAAGGAATTGGAAAGACCTTACTCGTGGCTAAAACCTGT  
  
1800  
TCATGAGAGAACTCATAGTAATGATAAACCCCTACAAATATAACGAATGTG  
  
1850  
GGGAAGCCTTCTGTGGACAACCTTACTCAAATGAGAAAATTGATACTGAT  
  
1900  
GAAACCTTATGATTGAAAGTTGTAAAAGAATATTTGTGTGCGTATAG  
  
1950  
ACAACCTTATCATAATAAGAACTCTTACTCTTGAGAACCTTGTGAATGTA  
  
2000  
AGGGTTGTGCAAAAGCCATTCAATTCTGTTATGGCAATTATCTTGCTA  
  
2050  
TCCAGCAATTCAACTAGTGAGAAATATTTGAATATAATTATATGAAA  
  
2100  
AGGCCTTGTACAGTCTTATTGGATATCAATTATACTGATG  
  
2143  
TAAAATCATTAAATGAAAAAAAAAAAAAAAAAAAAAA

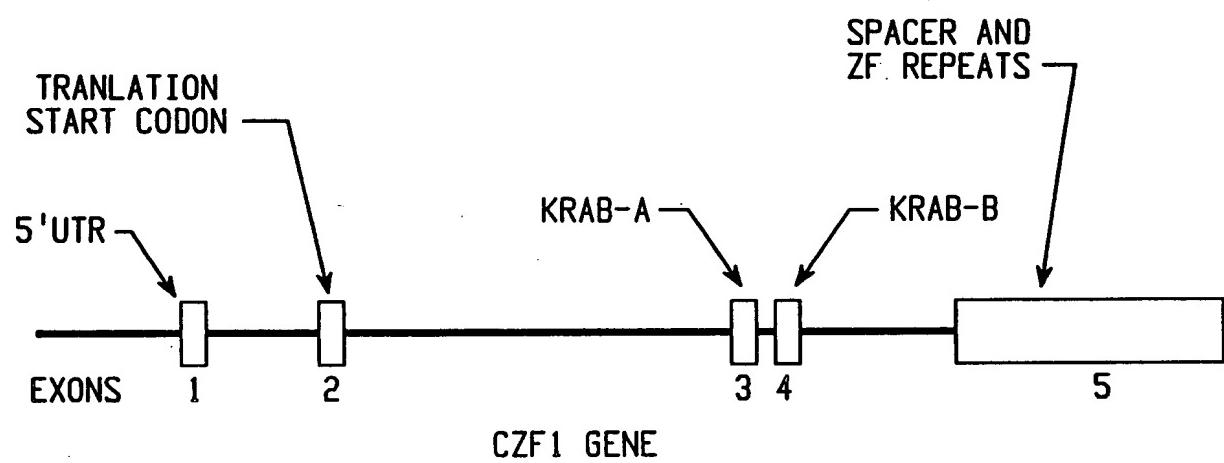
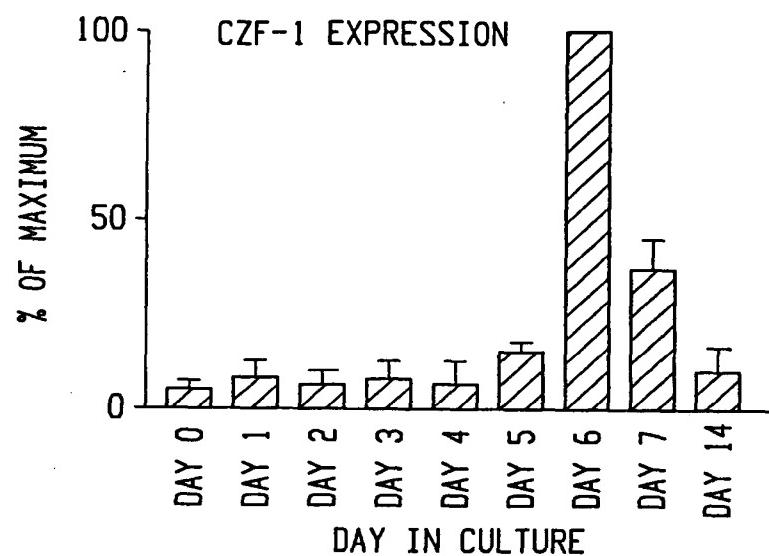
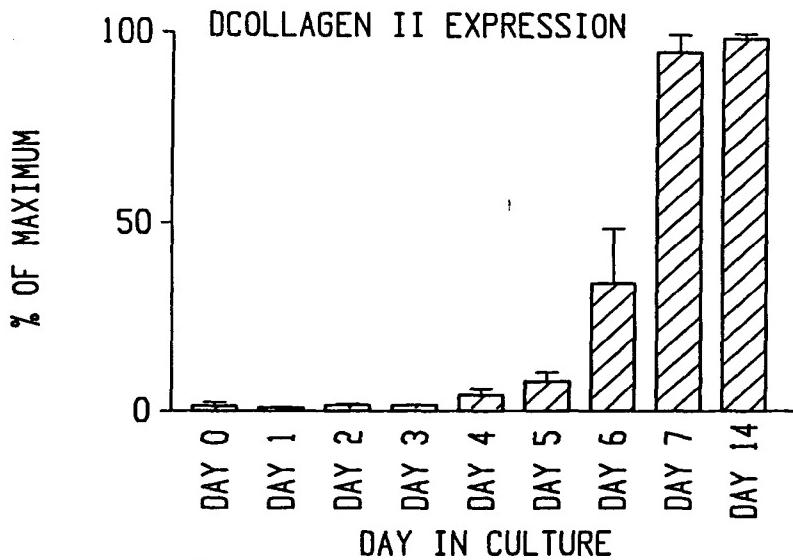


Fig. 7

A



B



C

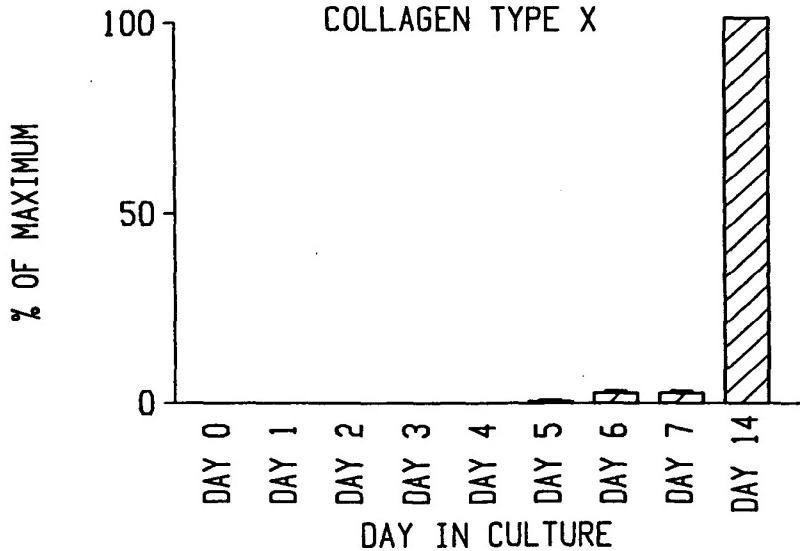


Fig. 8

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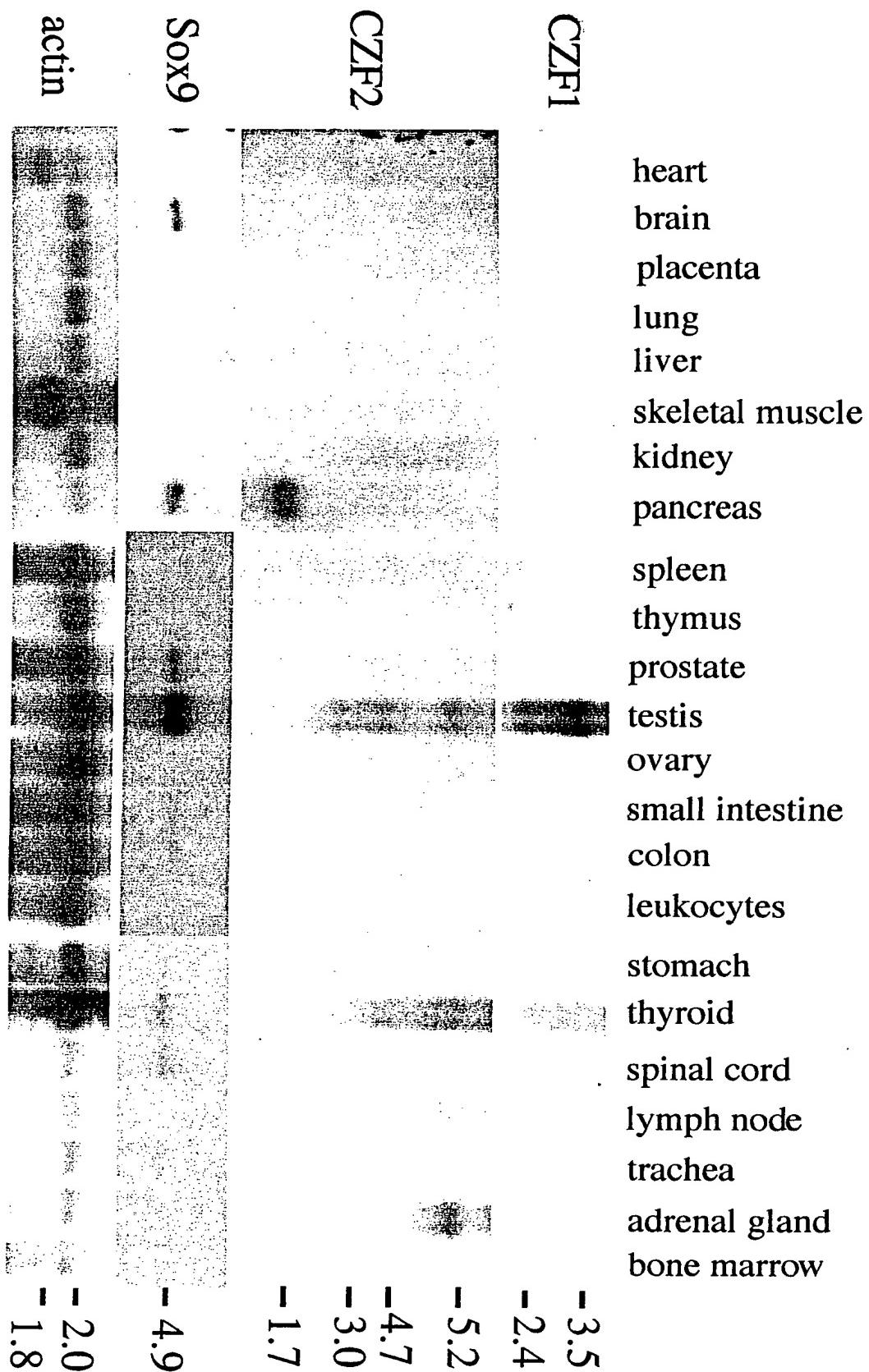


Fig. 9

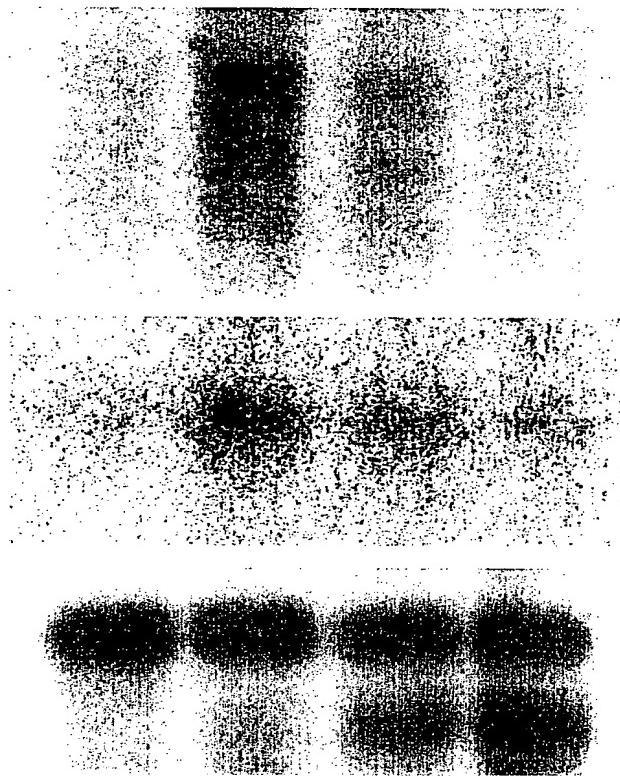
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day 7 11 15 17

CZF1



*Fig. 10*

Fig. 11

